

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

**Computing Department, Community College Dammam
University of Dammam**

**Course Specifications
(CS)**

Software Engineering

IS230

Software Engineering

Course Specifications

Institution : Dammam University	Date of Report
College/Department : Dammam Community College / Information Systems	

A. Course Identification and General Information

1. Course title and code: Software Engineering (IS230)			
2. Credit hours : 3 (2 Theoretical + 2 Practical)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course			
5. Level/year at which this course is offered : 2 nd Level - Year 1			
6. Pre-requisites for this course (if any) (CS110)			
7. Co-requisites for this course (if any)			
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="%70"/>
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. E-learning	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="%30"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B. Objectives

<p>1. What is the main purpose for this course?</p> <p>By the end of this course, the student should be able to:</p> <ol style="list-style-type: none"> 1. Software engineering techniques 2. Object Oriented Software Engineering 3. How to design and architecture software 4. Software Quality Assurance 5. How to use the methods of test software 6. Use reverse engineering to build software 7. The student can use the UML (Unified modeling language) in practical applications.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p>

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

This course introduces the most important definitions and basic concepts in software engineering, life cycle and software processes, software testing, validation and verification software, and software maintenance.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
1. The basic concepts of Software Engineering	1	2 T + 2 P
2. Phases of software development	1	2 T + 2 P
3. Software Engineering Requirements	1	2 T + 2 P
4. Software engineering techniques	1	2 T + 2 P
5. Object Oriented Software Engineering	1	2 T + 2 P
6. Software design and architecture	1	2 T + 2 P
7. Software quality	1	2 T + 2 P
8. Software testing techniques	1	2 T + 2 P
9. Reverse engineering	1	2 T + 2 P
10. Software maintenance	1	2 T + 2 P
11. Software configuration management	1	2 T + 2 P
12. Software engineering management	1	2 T + 2 P
13. Software engineering tools and methods	1	2 T + 2 P

14. Models and methods of designing database systems.	2	2 T + 2 P
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2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30			30		60
Credit	30			15		45

3. Additional private study/learning hours expected for students per week.

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Determine the various software engineering principles, tools and methodologies used for system design and development.	Lectures, Presentations, Class discussions	Seat Work,, Major Exam, Assignment
1.2	Explain software development process and models.		
2.0	Cognitive Skills		
2.1	Apply software project management skills in the design and development of a system.	Lectures, Presentations, Class discussions, Independent work	Seat Work, Programming Project/Machine Problem, , Major Exam, Assignment
2.2	Use software engineering methods and tools in developing a system.		
3.0	Interpersonal Skills & Responsibility		
3.1	Select the most appropriate software process model for a given system.	Lectures, Presentations, Class discussions	Seat Work, Programming Project/Machine Problem, , Major Exam, Case Analysis
3.2	Design and develop a system using appropriate software engineering techniques.		
4.0	Communication, Information Technology, Numerical		
4.1	Communicate and present results or information effectively.	Lectures and Class Discussions	Programming Project/Machine Problem, Student presentations
4.2	Work effectively in a team.		
5.0	Psychomotor		

0			
5.1	N/A	N/A	N/A
5.2			

5. Course Learning Outcomes Mapping Matrix

Identify on the table below the Course Outcomes and Relationship to PLOs

Course Learning Outcomes	Program Learning Outcomes
1. Knowledge	
1.1	1.1
1.2	1.2
2. Cognitive skills	
2.1	2.3
2.2	2.1 , 2.2
3. Interpersonal Skills and responsibility	
3.1	3.1, 3.2
3.2	3.3
4. Communication IT and Numeral Skills	
4.1	4.2, 4.3
4.2	4.1
5. Psychomotor Skills	
5.1	N/A

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Mid-term	8	%20
2	Project	12	%10
3	Lab	13	%20
4	Attendance/Participation	All weeks	%10
5	Final	17	%40

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each

week)

- Each group of students is assigned to a member of staff who will be available for help and academic guidance office hours at specific 2 hours on daily basis.

E. Learning Resources

1. List Required Textbooks

Software Engineering, 9th Edition, Sommerville, Ian, Addison Wesley, 2010.

2. List Essential References Materials (Journals, Reports, etc.)

Software Engineering: A Practitioner's Approach, 7th edition, R. S. Pressman, McGraw Hill, 2009.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

- Blackboard.

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

- CDs accompanied with the text book, power point lectures and essential references.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

Classrooms:

- Furnished with a large central table or multiple small tables that can be grouped into one central table.
- Designed for up to 25 students.
- Size the room allowing 1sq meter per seat.

Laboratories:

- 25 PC's, one for each student.

2. Computing resources (AV, data show, Smart Board, software, etc.)

- Smart Board, projector, internet, and whiteboard.

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

- None.

G. Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Student questionnaires to be assessed by independent body.
- Assessment of course teaching strategies by independent body.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor

- Student questionnaires to be assessed by department.

3 Processes for Improvement of Teaching

- Revision of course contents, course specifications, and strategies every 5 years.

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Check marking by an independent member of staff of a sample of student work.
- Periodic exchange and remarking of a sample of assignments with a member of staff in another institution.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Reviewing student's feedback.
- Update text books.
- Consulting other top universities course specifications and contents.